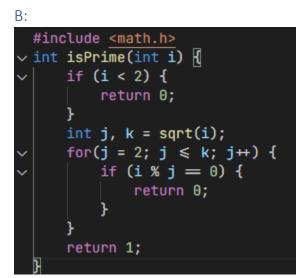
CS2263 Assignment 1 – Isaac Shoebottom

A:

A Fibonacci prime is quite simply, a number from the Fibonacci sequence that is also prime. There is a list of known Fibonacci primes (n = 3, 4, 5, 7, 11, 13, 17, 23, 29, 43, 47, 83, 131, 137, 359, 431, 433, 449, 509, 569, 571, 2971, 4723, 5387, 9311, 9677, 14431, 25561, 30757, 35999, and 81839.) It is though that there is an infinite number of them, but it has not been proven. (Sources:

https://primes.utm.edu/glossary/xpage/FibonacciPrime.html, https://mathworld.wolfram.com/FibonacciPrime.html)



C:

```
#include <stdio.h>
int isPrime(int i);
int main() {
    int i;
    printf("Please enter a number to check if prime: ");
    scanf("%d", &i);
    if(isPrime(i) = 1){
        printf("Your number is prime");
    }
    else {
        printf("Your number is not prime");
    }
```

```
[23:21:38] ~\..\..\..\..\1 on > gcc .\testingPrimes.c .\isPrime.c -o testPrime
[23:22:12] ~\..\..\..\..\1 on > .\testPrime.exe
Please enter a number to check if prime: 2
Your number is prime
[23:22:37] ~\..\..\..\1 on > .\testPrime.exe
Please enter a number to check if prime: 1
Your number is not prime
[23:22:39] ~\..\..\..\1 on > .\testPrime.exe
Please enter a number to check if prime: 12321312
Your number is not prime
[23:22:41] ~\..\..\..\1 on > .\testPrime.exe
Please enter a number to check if prime: 11
Your number is prime
[23:22:44] ~\..\..\..\1 on > .
```

D:

```
#include <math.h>
int isPerfectSquare(int i) {
    int s = sqrt(i);
    return (s*s = i);
}
int isFib(int i) {
    return isPerfectSquare(5*i*i+4) || isPerfectSquare(5*i*i -4);
}
```

E:

```
#include <stdio.h>
int isFib(int i);
int main() {
    int i;
    printf("Please enter a number to check if part of fibonacci sequence: ");
    scanf("%d", &i);
    if(isFib(i) = 1){
        printf("Your number is part of the fibonacci sequence");
    }
    else {
            printf("Your number is not part of the fibonacci sequence");
    }
}
```

[23:24:49] ~\..\..\..\1 on > gcc .\testingFib.c .\isFib.c -o testFib [23:25:08] ~\..\..\..\1 on > .\testFib.exe Please enter a number to check if part of fibbonacci sequence: 0 Your number is part of the fibbonacci sequence [23:25:18] ~\..\..\..\1 on > .\testFib.exe Please enter a number to check if part of fibbonacci sequence: 2 Your number is part of the fibbonacci sequence [23:25:19] ~\..\..\..\1 on > .\testFib.exe Please enter a number to check if part of fibbonacci sequence: 56 Your number is not part of the fibbonacci sequence [23:25:22] ~\..\..\..\1 on > .\testFib.exe Please enter a number to check if part of fibbonacci sequence: 56 Your number is not part of the fibbonacci sequence [23:25:22] ~\..\..\..\1 on > .\testFib.exe Please enter a number to check if part of fibbonacci sequence: 56 Your number is part of the fibbonacci sequence [23:25:22] ~\..\..\..\..\1 on > .\testFib.exe

F:

```
#include <stdio.h>
int isFib (int i);
int isPrime(int i);
int main() {
    int x1, x2;
    printf("Please enter min value: ");
    scanf("%d", &x1);
    printf("Please enter max value: ");
    scanf("%d", &x2);
    int i;
    for(i = x1; i \leq x2; i++) {
        if ((isFib(i) = 1) \& (isPrime(i) = 1)) \{
            printf("%d ", i);
        }
    printf("\n");
    return 0;
```

[23:27:50] ~\..\..\..\1 on > gcc .\isPrime.c .\isFib.c .\isFibPrime.c -o isFibPrime [23:28:12] ~\..\..\..\1 on > .\isFibPrime.exe Please enter min value: 10 Please enter max value: 100 13 89 [23:28:24] ~\..\..\1 on > .\isFibPrime.exe Please enter min value: 1597 Please enter max value: 1597 1597 [23:28:32] ~\..\..\..\1 on >